



UNITED STATES DEPARTMENT OF COMMERCE
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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/841,617 02/25/92 NEUMEYER

J RBI-101XX

EXAMINER
CHAPMAN, A

22M2/1101

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ART UNIT	PAPER NUMBER
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2203

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DATE MAILED: 11/01/93

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 8/18/93 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-45 are pending in the application.
- Of the above, claims 13-28 and 37-45 are withdrawn from consideration.
2. ☒ Claims 2, 3, 8, 9, 31, 35 have been cancelled.
3. ☒ Claims 1, 4-7, 10-12 are allowed.
4. ☒ Claims 29-30 and 33-34 are rejected.
5. ☒ Claims 32 and 36 are objected to.
6. ☐ Claims are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on . Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction, filed on 8/18/93, has been ☒ approved. ☐ disapproved (see explanation).
by examiner
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. ; filed on
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. The amendment filed 8/18/93 has been entered.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 29-30 and 33-34 are rejected under 35 U.S.C. 103 as being unpatentable over Carroll et al. (U.S. Pat. No. 5,128,118) in view of Clarke et al. (U.S. Pat. No. 3,813,404) and further in view of Mertens (U.S. Pat. No. 4,942,231) and Kung et al. (U.S. Pat. No. 5,186,921).

Carroll et al. disclose cocaine receptor binding ligands as shown in the figure at the top of column 2. Carroll et al. do not disclose that R₁ can be H nor do they disclose kits for the preparation of these compounds. Clarke et al. teach tropane derivatives which are very similar to the compounds taught by Carroll et al. However, Clarke et al. teach that R", which corresponds to Carroll et al.'s R₁ and Applicant's R, can be H. Thus, it would have been obvious to substitute a hydrogen for the R₁ group of Carroll et al. since the two inventions share significant structural similarity and since this substituent would not affect the ability of the compound to be used for mapping monoamine reuptake sites.

Neither Carroll et al. nor Clarke et al. specifically teach a kit for preparation of the iodinated neuroprobe. The use of kits, however, is well known in the art of radiolabelling and in particular radiohalogenating. These kits allow the preservation of the radionuclides which, if already attached to the ligand, may decay to the point where they are unusable. For example, Mertens discloses a method of preparing a radioiodinated compound in columns 4-5. In column 6, line 53-column 7, line 22 Mertens teaches the formulation of the invention in a kit. Thus, it would have been readily obvious to a person of ordinary skill in the art at the time Applicant's invention was made that the invention of Carroll et al. (with the H substituent of Clarke et al.) could have been set up in a kit as demonstrated by Mertens in order to conserve the the relatively short-lived radionuclides. Mertens and Carroll et al. both teach the radioiodination of compounds useful for diagnosis.

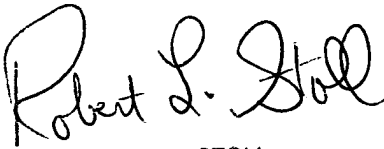
None of these three references specifically mention the preparation wherein the precursor and an oxidizing agent are reacted in the presence of a radioisotope source. However, using an oxidizing agent is a well-known method in the art of radiolabelling. Kung et al., for example, who teaches dopamine receptor ligands as imaging agents, uses hydrogen peroxide in the radiolabelling step of his reaction. (See Scheme 3 and the paragraph bridging columns 23-24). Thus, since Kung et al., like Carroll et al. and Mertens, disclose radiodiagnostic imaging agents, it would have been obvious to a person of ordinary skill in the art to include an oxidizing agent as in Kung et al. with the precursor of Carroll et al. in view of Clarke et al. in a kit as taught by Mertens.

4. Applicant's arguments filed 8/18/93 have been fully considered and have been found partially persuasive. Thus, the compound claims 1, 4-7, and 10-12 are allowable.

Applicant's arguments with regard to kit claims 29-30 and 33-34 are moot in view of the new grounds of rejection. Claims 32 and 36 are objected to as being dependent on rejected base claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lara Chapman whose telephone number is (703) 308-0450. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0511.

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ROBERT L. STOLL
SUPERVISORY PRIMARY EXAMINER
ART UNIT 223